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Teaching of the Elements of Agriculture in the Common Schools.

ADDRESS

BY

HON. C. C. JAMES,

Deputy Minister of Agriculture for Ontario, Canada.

Delivered at the Meeting of the Farmers' National Congress, at Boston, October 5, 1899, and printed by the Massachusetts State Board of Agriculture.

TEACHING OF THE ELEMENTS OF AGRICULTURE IN THE COMMON SCHOOLS.

The terms "ancient and honorable" are to-day applied to various offices and bodies, to mark them with special distinction, but there is no calling or profession more deserving of this distinction than that of agriculture. You who are assembled here belong to the ancient and honorable order of agriculturists. Those who are not so intimately associated with agricultural work as you are, may be ready to admit the appropriateness of the term "ancient," but rather slow to allow that of "honorable." Before preachers preached, and doctors practised, and lawyers argued, and teachers taught, man began to produce his daily bread by the sweat of his brow. This ancient order preceded that of dukes and earls, kings, queens and presidents, monopolists and magnates and political bosses. If length of years, antiquity and priority add importance to any calling, agriculture stands first and foremost.

And to this priority in time we may add priority in importance, for out of the initial or basic wealth of the soil has grown nearly all the wealth of the world, — it is the foundation upon which all other wealth has been built. Its distribution and handling have resulted gradually in the building up of the other trades, callings and professions. The teacher, the doctor, the lawyer, the engineer, and even the preacher, are all preceded by the farmer.

But is it honorable? We think so. All truly cultured people think so. And it is of prime importance that the great mass of farmers be brought to recognize it, to live up to it and to be honestly proud of it. A calling or an occupation that draws together from the four corners of the North American continent such an honorable body of men as have gathered here in this city must have some right to the title "honorable." You are not gathered to formulate a political platform in the ordinary sense of the word political; you have not gathered to enrich yourselves by the formation of a continental trust; you have not gathered to make war upon any other class of human beings, — but you are gathered as a great peace conference, to help on the greatest industry of this continent and to try to improve the condition of

the millions of farmers of America, and thereby increase the wealth and happiness and good morals of the whole people.

Do the people of this State or city appreciate the importance of the work in which you are engaged? Do the people of the United States and Canada appreciate it? Do *you yourselves* appreciate it? I trust that you do, — I feel sure that you do, otherwise you would not have come here. The conditions of your organization, its very life, depend upon such an appreciation.

Is there any other class of wealth producers on this continent that could meet in this city without arousing the jealousy or envy, or at least the close scrutiny, of some other class? The manufacturers of implements and machinery, the great mill owners and their operatives, the wholesale and retail storekeepers, the railroad presidents and the trainmen, the Wall Street brokers and their country agents, the doctors and lawyers, the teachers and preachers, — yes, even the homeless tramps, wish you well; you have the good wishes of all classes, for when you make money they prosper, and when you fail they go down. The motive power of this continent of people takes its rise in you, and in your success all are interested. This is significant, and it has an important bearing upon what I shall say later on. Your object is to increase the wealth, happiness and good morals of the whole people. Let me for a moment refer to these in more particular terms.

We in Canada, and you also in the United States, have read the never-ending story of the gold discoveries of the Yukon. During the present year perhaps twenty-five millions of dollars of gold have been produced. A few, a very few, comparatively, have made fortunes. Scores of lives have been lost, hundreds have shattered their health, thousands have spent their savings, — more money, in all probability, has been spent in seeking the gold than has been produced. Still the rage continues, and the papers fill their columns with the news. During the same period of time the farmers of the Province of Ontario produced wealth amounting to at least $250,000,000. If we could increase the farm products of Ontario by only 10 per cent., we would add as much wealth to the country as the Yukon has produced. And when we consider the great extent of what may be called average farming, or poor farming, and the comparatively small amount of profitable, high-class, or, if you will, "scientific" farming that is carried on, the possibility of improving the production by 10 per cent. appears away below the mark. You have seen the poor fields asleep and inert because of their undrained condition; you have seen the luxuriant weed growth stealing the fatness of the land from the farmer's family; you have seen the poor seed, underbred, weak and low in vitality;

you have seen the poor scrub, the cow that boards with the farmer winter and summer and is unable to pay her board bill; you have seen the gnarled and scurfy orchards, the undisturbed breeding grounds of the marvellous insects that are so beautiful to the entomologist but so death-dealing to the agriculturist. I need not multiply the examples; you know them all. But multiply them by thousands, — rather by millions, — and foot up the cost, and your total will reach millions upon millions, — figures which will appal the calculator.

Let me put it in another form. Suppose that by improving farming we could increase the wheat production of the United States and Canada by only one bushel an acre (and when we see what is done by the experiment stations and the more advanced farmers, through clean cultivation and seed selection, we conclude that it is quite possible to increase it not simply by one but by several bushels); the wheat yield would be increased by 45,000,000 bushels. That would represent a yearly increase of over $25,000,000. When we apply the same to oats and barley and corn and the other cereals, we roll up a total that makes the gold and silver product of the Yukon, of California and of Colorado, seem a small affair.

But we must not pass by the cow. There are some excellent cows in America, cows that produce 6,000, 7,000, 8,000, 9,000, 10,000 pounds of milk per annum; but oh, the great host that produce 4,000 pounds and less. And it is not the poor cows' fault in all cases. The good cows are well cared for and well fed; the poor cows, — the bleak hill pastures and the lee side of the straw stack could tell their story. Ten per cent. increase in the yearly milk product of the cows of America would add $40,000,000 to the annual wealth.

Let us begin with the soil, and from this meeting as a centre send out our orders. We direct that all the soils of this continent requiring drainage shall be drained; that a better system of cultivation be followed; that useless fences be cleared away, and weedy insect-breeding grounds be broken up; that only the best varieties of seed be chosen, and that the sowings be carefully selected; that the cattle and stock be provided with clean water and wholesome food, and protection from storms that use up valuable food and from excessive heat that uses up vital energy; that care and kindness be part of their daily ration; that the unprofitable animals be kindly but firmly ordered off the farm; that the orchards be cleaned up, fed, pruned and sprayed; that the kitchen garden be run as an adjunct of the farmer's dining room; that the stables be cleaned out and lighted and ventilated; that the manure pile be covered

and the leakages stopped in this savings deposit; that the creameries and cheese factories be overhauled, in accordance with John Wesley's preaching that "cleanliness is next to godliness;" that the lawns and flower plots about the farmer's house be trimmed and brightened up; that the country school-houses be changed from rural outbuildings into home-like, attractive pleasure grounds. You order all this, and by a miraculous power bring it into effect. The wealth of the people goes up by leaps and bounds of millions.

All this and more can be done by leading up or out the farmers. And what is this leading out? The technical word is "education." Need I stop to prove that the happiness of the workers will advance at the same time? Need I even wait to prove that the good morals of the people will advance at the same time? The rural classes are the source of the people's strength, the very centre of the nation's life; and if the improvement can be started there, if we can add anything to that movement, it is not merely our privilege but our duty to do so. To accomplish this, education of the right form, well directed and properly stimulated, is, in my opinion, of first importance at the present time. Departments of agriculture, with their manifold organizations and sub-divisions, are important. Associations of live stock owners and breeders are also important.

Farmers' institutes have been called the farmers' schools, and they have accomplished much by their teachings. But they are for present, not for future farmers. Agricultural colleges are reaching out, and are important as training schools for teachers, but they touch only the fringe of the great mass of the rising host. We start the education of doctors and lawyers and preachers and teachers and engineers in our public schools. Suppose we were to say to the doctors, "Go to school and learn to read and write and spell, then begin practising, and later on, when you have been working for some years, we will form doctors' institutes, and send specialists to talk to you and enthuse you in your work, to tell you what mistakes you are making and to compare notes with you." What would you say? Do we let the lawyers go ahead with their work until they are full grown and experienced? Not at all. We arrange our school courses to help and assist the professional man as early in his career as possible; then we make every doctor, every lawyer, every teacher and nearly every preacher take a special course, as practical and as searching as possible, before we give him his diploma and turn him loose to work among his fellow men. But with the farmer we have acted so differently, — or, rather, we have not acted at all. Is it not time to act? Is the farmer not as important a factor in our country's weal as the

lawyer, the doctor and the teacher? Is it not about time that we at least make an effort, in a rational manner, to see whether we cannot do justly and fairly by the agriculturist?

Hundreds of millions of dollars have been given by the governments and philanthropists to provide education for professional men and for training experts in the pursuits of town and city. Seven institutions of learning in the United States have a total wealth of over $90,000,000. *Education costs a great deal, but ignorance costs much more.* If one-tenth of the amount expended in training for town and city pursuits had been expended in agricultural education and investigation, would there not have been produced some marvellous results? This question, then, is not to be dismissed because it would involve any large financial outlay.

I propose to discuss for a few moments the question of introducing the study of agriculture into our public schools. I can touch upon it but briefly, and in a suggestive manner. And in order to set myself right before you, allow me to make the announcement that, beginning with the September school term of 1899, the Minister of Education in Ontario has made agriculture a compulsory subject in two forms of all our rural public schools, and allows it to be taken as an option in all urban public and high schools. I need not tell you that this is considered a forward movement of great importance in connection with agricultural education in Ontario. Manitoba also has had the subject upon her public school course for a couple of years, and during the present year Nova Scotia and New Brunswick have added it to the curricula of their common schools.

"Perfect agriculture is the true foundation of trade and industry, — it is the foundation of the riches of States." These are the words of the great Liebig, one of the founders of the modern science of agriculture. They were uttered half a century ago, but they are more pregnant with truth at the end of the nineteenth century than they were in the middle of the century when Liebig was carrying on his agricultural investigations; or than at the beginning of the century, when Sir Humphrey Davy was unfolding for the first time his memorable proposal for agricultural investigation before the learned societies of England. They are applicable to all civilized and all semi-civilized countries, but they have a special significance when applied to Canada and the United States.

Let me give you some figures from the wealth product of Canada. Our fisheries add annually to our wealth to the amount of $20,000,000, our mines nearly $40,000,000 and our forests about $80,000,000; agriculture adds no less than $600,000,000,

or over four times as much as the other three sources of wealth combined.

Now let us quote a more modern educationist as to the workers in this field: —

Identified as I am by birth and early education with the agricultural population of this country, I regret to see so many of our agricultural youth leave the noblest of earthly employments and the most independent of social pursuits for the professions, the counting room, the warehouse, and even for petty clerkships and little shops. I know that persons in public offices, and inhabitants of cities and towns, who have no farms, must, for the most part, bring up their sons to other employments than that of agriculture; personal peculiarities and relations may prompt to the same course in regard to some farmers' sons; and a divine call may select from the farm, as well as from the shop and the college, for a divine vocation; but that, as a general rule, the sons of farmers, as soon as they begin to be educated, leave the farm, is a misfortune to the parties themselves, a loss to agriculture and to the country. A boy's leaving the farm because he has, or is acquiring, a good education, is an assumption or admission by all consenting parties that a farmer does not need such an education; and as long as this error is admitted, by farmers not being educated, agriculture will be looked down upon, instead of being looked up to, as a pursuit for educated men.

Educated farmers, educated merchants and educated manufacturers and mechanics will not only develop and advance the material interests of the country, but its civil and social interests, by enabling the people to select chiefly intelligent and well-to-do men from these classes as their representatives, — men not needing an office for support, or making politics a trade, — affording the best chance of practical wisdom and honesty in legislation and government, and the hope of producing the great public desideratum, — a generation of honest politicians and patriotic statesmen.

One might reasonably assume that this is an extract from an address before one of our farmers' institutes, or has been taken from a lately issued report of some department of agriculture, and that they are the words and opinions of some leading agriculturist. Not so, however. These are the words of Egerton Ryerson, the founder of the public school system of Ontario, taken from the introduction to his text book on agriculture for use in Ontario public schools, and written in 1870.

I can well believe that twenty-five years from the present some student of the educational and economic history of Ontario will be hard at work studying out and trying to explain why so little progress was made in general agricultural instruction in that Province during the years from 1870 to 1899. During that period four text books at least were available and various attempts were

made at encouraging the work; but in 1898, as far as Ontario was concerned, we were no further advanced than we were in 1870.

Let me now briefly state my views under four heads: —

I. Should agriculture be taught in our schools?

II. When and where should it be taught in our school programme?

III. What can be taught, and how can it be taught?

IV. What benefits may we expect as a result of this work?

I. Should agriculture be taught?

If agriculture can be taught in our schools, that is, if there are time and place for it, and if it can be presented in a form adapted to school pupils, the more reasonable form for this question, it seems to me, is, "Should agriculture not be taught?"

The agriculture of the older States and Provinces is in a critical condition. We certainly have not yet reached the most acute condition that has come to the farmers of Great Britain, France and Germany, but we have reached a point which, compared with the conditions of the newer farming communities of the prairie States and Provinces, can be expressed by no better term than "critical."

The building up of the pure-bred live stock interest of Ontario and the development of our dairy industry have been the two main factors in saving us from a condition that could be described only by the term "desperate."

Just now the conditions are more favorable than they have been for some time. Prices have improved for us, partly because of the temporary misfortunes of agriculturists in other parts of the world, and partly because of general trade revival. One consequence of this is seen in the great rush at present in progress for the cheap productive lands of Manitoba and the north-west Territories. If nothing be done to give a decided upward movement to our eastern agriculture, however, we may soon find ourselves approaching the conditions now prevalent in the older farming lands of Europe. Let me give you a statement of that condition from the pen of one who is an authority. M. Tisserand, the late director-general of agriculture in France, speaks as follows in a report to the recess committee of the British House of Commons, dealing with the question of the industries of Ireland: —

In this extraordinary century, when everything has been profoundly modified by steam, when distances have disappeared, and the Australian with his wool, the Indian with his corn and the American with his cattle and his dead meat can reach the markets of Europe at less cost than it took the farmer of Yorkshire at the beginning of the century to get produce to London, old methods and paternal traditions have become

insufficient for the struggle which has to be carried on against foreign competition. It is no longer the struggle for life between man and man which is in question; it is the struggle for existence between industry and industry, between agriculture and agriculture, between country and country.

The authorities of France are thoroughly awake to the situation, and are now carrying on the most thorough system of general agricultural instruction, in order to provide trained men to "man the ship" in her perilous career.

One of the distinguishing features of the agriculture of to-day is the rise of co-operative associations. In Ontario we have had agricultural societies ever since the Province was organized, in 1792, and for nearly seventy years legislative grants have been made for their encouragement. But the societies for discussion of agricultural topics, for interchange of ideas and for teaching or instruction by experts are of more recent origin. We have associations of the owners and breeders of all the leading breeds of live stock. We have a fruit growers' association, associations also of the poultry keepers and of the bee keepers, an association of experimenters, two associations of the dairymen and an entomological society. All these, through their many meetings, and the hundreds of meetings of farmers' institutes, have quickened the minds of the workers. Supplementing these meetings, reports and bulletins have been distributed by the hundreds of thousands in the past ten years. But the point that I wish to make here is, as I said before, that the persons principally benefited by this work are the men and women of mature years. This is all very well in its way. These men appreciate thoroughly what is being done, they recognize the importance and the necessity of this instruction; but is it not beginning at the wrong end? Why should the farming class of this country have to wait until they become men before they learn that there is a science underlying their practice? If it is a good thing to educate a grown man or a grown woman in the principles of agricultural work, it is still more important, as far as practicable, to give the boy and the girl some training in these principles early in life, at the time when these principles are most easily acquired and when they will be of most permanent benefit. I therefore have no hesitation in answering my first question by saying that agriculture in some form should be taught to the pupils of our schools.

II. When and where should it be taught?

Most persons, I think, are of the opinion that some instruction in agriculture should be given to pupils in rural schools, since they assume that these pupils are to be the future farmers. They are

not, in general, of the opinion that the teaching should be given in town and city schools, because the pupils of such schools are likely to move out into professional pursuits, become school teachers, enter mercantile life, or follow some one of the many manufacturing lines. They are not quite sure that all pupils in rural schools, even, should be taught agriculture, as so many are yearly coming from the country to the town, to reinforce the struggling city classes with new blood and new physique. Right here I would present a debatable proposition. If agriculture can be taught in our schools in a manner such as I will suggest in my next division, I am of the opinion that it should be on the course of study for town and city pupils as well as on the course for rural pupils. Perhaps in city and town schools it might be made optional, but in rural schools it should be obligatory. The present situation is that with very few exceptions all town and city pupils will remain in city and town pursuits, and the country schools are also being annually drained of the majority of the brightest and most ambitious. That I shall not here discuss. If we can, by altering or rearranging our system, keep more of the best rural pupils in touch with agriculture, and if we can at the same time arouse in some of the town and city pupils a sympathy for agricultural methods and agricultural life, we shall be looking to the best interests of the pupils and of the country as a whole. I am of the opinion that a course of agriculture can be given in town and city schools that will be interesting and beneficial, and that will be in harmony with the best educational methods or system. I would put a course in the science of agriculture within the reach of every pupil in all of our schools, and I would therefore begin the work in the public schools, rural and urban alike. It might be best to begin the work here by making agriculture a compulsory subject in the fourth form of our public schools, and from this as a starting-point work out in time a system of instruction adapted to our conditions, prefacing it first by a simpler course in the third form, and adding an advanced course to our high school work. I believe that agriculture can be taught just as well to the public school pupils as are some of the subjects at present on the course, and I believe that the pupils themselves will come to the subject with as much eagerness.

What should pupils learn in a public school? Our public school pupils should learn to respect the truth, and to admire and emulate strong, sound morality. These virtues will be taught largely by the personality and deportment of the teacher.

They should be stimulated to a love of order and neatness and pleasant surroundings. This should be acquired from the arrangement and condition of the school building and the school grounds.

They should be taught to speak and read the English language with a fair degree of proficiency.

They should be taught to use the pen and pencil.

They should be able to make the simple, every-day mathematical calculations with accuracy.

They should know the main facts of their own country's history and its geography.

They should be taught to use their powers of observation; to see, to touch, to hear, and even to smell and taste. If their senses are rightly trained, they will be able to acquire facts for themselves. One of the greatest educational curses is to train a child to become an intellectual miser, — a mere hoarder of facts.

Would you prefer that your boy be given $100,000 in cash, or be given the ability and training whereby he can honestly acquire $100,000 for himself? The aim should be to make the education of our youth a blessing, and not a curse.

III. What can be taught, and how should it be taught?

This is the most important of the four questions, — it is that upon which the whole argument turns. I think that delay in introducing agriculture into our schools has occurred principally because of the difficulty, in fact, the present impossibility of introducing into our schools instructions as to how to farm. Our schools could not be equipped for training in the practice of agriculture, except at an enormous cost; and our public school teachers could not be expected to teach the young idea how to farm, even in the crudest manner. Here is the point, — any instruction now given in our schools should deal simply with the science of agriculture; the practical application of the scientific principles may be left to the home training, and to such specially equipped institutions as our agricultural colleges. It is quite possible that in time something may be done for our rural schools as has been done in France, Germany and other European countries, in the way of adding small gardens and plots, wherein some of the lessons of the school-room may be applied, and where illustrations may be found in the growing trees and shrubs, and the development of seeds sown by the hands of the pupils themselves.

The science of agriculture is eminently adapted for school instruction, and a student of natural science could not lay a better foundation for his future work than by first mastering the general principles of the various sciences which together form what we call the science of agriculture. Let us briefly note what it includes.

Agriculture consists mainly in the growth of plants, the feeding of some of these plants to animals, and the working over of the animal products resulting.

First of all we have the air and the soil. A study of these gives us an introduction to chemistry, geology, meteorology and physics.

The growth of plants brings in the study of botany, and closely follows an introduction to entomology.

The study of the animals at once calls for some of the simplest principles of zoölogy, anatomy and physiology.

Bacteriology comes in when we study the diseases of plants and animals and the making of cheese and butter.

And so we might sum up by saying that a study of the science of agriculture implies a beginning in all the natural sciences that are afterwards found in our high schools and colleges. The study of the science of agriculture is, to a large extent, a course in "nature study;" and, since the illustrations are taken from plants, soils, insects and animals, with which all boys and girls are more or less familiar, the subject may be made to appeal to the every-day observation of the pupils.

You will understand, of course, that I do not advocate the placing of all these sciences upon the school course, but the first principles of all, in as far as they constitute a part of the composite science of agriculture.

What I am trying to lay before you as my idea of how agriculture might and should be taught in our schools has been more clearly and forcibly put by that master teacher, Huxley, who, in addressing a farmers' club in England on this subject, spoke as follows: —

There are some general principles which apply to all technical training. The first of these is, I think, that practice is to be learned only by practice. The farmer must be made by thorough farm work. I think I might be able to give you a fair account of a bean plant, and of the manner and condition of its growth; but if I were to try to grow a crop of beans, your club would probably laugh consumedly at the result. Nevertheless, I believe that practical people would be all the better for the scientific knowledge which does not enable me to grow beans. It would keep you from attempting hopeless experiments, and would enable you to take advantage of the innumerable hints which Dame Nature gives to the people who live in direct contact with things.

And this leads me to the general principle which I think applies to all technical training of all school boys and school girls, and that is, that they should be led from the observation of the commonest facts to general scientific truths. If I were called upon to frame a course of elementary instruction preparatory to agriculture, I am not sure that I would attempt chemistry, or botany, or physiology, or geology, as such. It is a method fraught with the danger of spending too much time and attention on abstractions and theories, on words and notions, instead of things. The history of a bean, of a grain of wheat, of a turnip, of a sheep, of a pig, or of a cow, properly treated, — with the introduction of the elements of chemistry, physiology and so on as they come in, —

would give all the elementary science which is needed for the comprehension of the processes of agriculture, in a form easily assimilated by the youthful mind, which loathes anything in the shape of long words and abstract notions, and small blame to it

Every rain that falls, every tiny stream by the roadside, the shooting of the green blade in the spring, the nodding buttercups, the golden-rod, the tall bull thistle, the early dropping apple with its worm hole, the ball of blackknot upon the cherry, the jumping grasshopper, and the hundreds of nature's children, should attract the attention of our children out of doors, and arouse in them a love that is not born of ignorance but of true knowledge. Nature in the country, in the village, in the town, and even in the city, lies before our children as a great unnoticed, unmeaning book. Our children, by their natural sympathy with nature and by their God-given faculties, appeal through us to the great Creator of nature. "Open Thou mine eyes, that I may behold wondrous things out of Thy Law."

Instruction in agriculture in our schools may be very limited, but if nothing more be done than to start our rural pupils thinking, to give them an impetus or a turn in the right direction, to develop in them a taste for agricultural study and investigation, to arouse in them a desire to know more and to read more about agricultural affairs, and especially to increase in them a respect for their work and a pride in their calling, then the most important end of their education will have been attained.

IV. What benefits may we expect to result from this work?

1. Our pupils will be learning in school the simple principles of their work at home; their school work and home work going hand in hand, the science of school with the practice of home, they will make more rapid progress in both; their educational development will be more certain.

2. Their pleasure in home work will be quickened, the dreariness of dull farm work will disappear, farm work will assume a new aspect, the attractions of town and city life will fade away, — not because city life becomes less attractive, but because farm life becomes more attractive. The old and oft-quoted story from mythology is very suggestive here. On a rocky, dangerous coast in the Mediterranean the entrancing music of a siren lured many sailors to their destruction. Ulysses, as he passed that way, filled his sailors' ears with wax that they might not hear, and tied himself to the mast that he might not be overcome. But Orpheus, as he passed by, produced upon his own boat such exquisite melody that the siren's music was passed by unheeded. Sermons and lectures, and even statutory laws, will be of no avail in turning the

best of our youth towards agriculture. It can be done only by making it more attractive than any other pursuit.

3. All over this land the agricultural status will be raised, and farming may be expected to assume a more lucrative form.

4. The development of a strong, sturdy, prosperous, contented rural community will solve many social problems that to-day threaten the peace of this continent.

One hundred years ago there was but little to teach to the agriculturists of the world. When Sir Humphrey Davy, in the years 1802–12, delivered his lectures on chemistry applied to agriculture, he was standing as a prophet on the threshold of this century, proclaiming the wondrous things that might and would be done for this great industry. Liebig, a generation later (1840), spoke to the world, and showed what marvellous advance had been made. The light was coming over the apparently unending dark ages of agriculture. A call was made for scientific investigation and instruction. I was reading only a few days ago a powerful argument in favor of the establishing of agricultural colleges in the United States, by Allen, author of the "American Herd Book." It appeared in the "Agriculturist" in 1847. These agricultural colleges for which he appealed have been established, and experiment stations have been equipped. It has taken fifty years to do it. In the agricultural papers of Ontario fifty years ago strong pleas were made for agricultural instruction in our public schools. But little has been accomplished. We are just taking the first steps. Perhaps all things are working for good, however, and it may have been the wisest course to allow our agricultural colleges and our experiment stations to become thoroughly established and recognized before attempting the wide dissemination of agricultural truth. To-day we stand on the threshold of the twentieth century, and in my humble opinion the time is opportune, the conditions are right and the duty is imperative for beginning the work of agricultural instruction in our public schools in a rational, thorough manner. May our successors of the next century say of us, "They builded better than they knew."